

## CLAIMS:

1. A dual-stack optical data storage medium for at least read out using a focused radiation beam with a wavelength  $\lambda$  between 400 nm and 410 nm and an Numerical Aperture (NA) between 0.84 and 0.86, entering through an entrance face of the medium during read out, comprising:

5                   -a substrate with present on a side thereof:  
                  -a first stack of layers named L0 comprising a first information layer,  
                  -a second stack of layers named L1, comprising a second information layer,  
L1 being present at a position closest to the entrance face and L0 more remote from the entrance face than L1,

10                   -a radiation beam transparent spacer layer between L0 and L1,  
                  -a radiation beam transparent cover layer between the entrance face and L1  
                  -a transmission stack named TS0 with a thickness  $d_{TS0}$  and an effective refractive index  $n_{TS0}$  containing all layers between L0 and the entrance face,  
                  -a transmission stack named TS1 with a thickness  $d_{TS1}$  and an effective  
15 refractive index  $n_{TS1}$  containing all layers between L1 and the entrance face,  
characterized in that

the spacer layer has a thickness selected from the range 20 – 30  $\mu\text{m}$ , the thickness  $d_{TS0}$  in dependence on the refractive index  $n_{TS0}$  is within the upper shaded area in Fig.1 and the thickness  $d_{TS1}$  in dependence on the refractive index  $n_{TS0}$  is within the lower shaded area in  
20 Fig.1.

2. An optical data storage medium according to claim 1, wherein the maximum deviations of  $d_{TS0}$  and  $d_{TS1}$  from respectively the average values of  $d_{TS0}$  and  $d_{TS1}$  between a radius of 23mm and 24 mm of the medium do not exceed  $\pm 2 \mu\text{m}$  measured over the whole  
25 area of the medium.

3. An optical data storage medium according to claim 1 or 2, wherein  $n_{TS0}$  and  $n_{TS1}$  both have a value of 1.6 and the following conditions are fulfilled:  $95 \mu\text{m} \leq d_{TS0} \leq 105$

$\mu\text{m}$  and  $70 \mu\text{m} \leq d_{\text{TS1}} \leq 80 \mu\text{m}$ .

4. An optical data storage medium according to any one of claims 1 - 3, wherein the spacer layer thickness is  $25 \mu\text{m}$  or substantially close to  $25 \mu\text{m}$  and the cover layer
- 5 thickness is  $75 \mu\text{m}$  or substantially close to  $75 \mu\text{m}$ .
5. Use of an optical data storage medium as claimed in any one of the preceding claims for reliable data read out from both the first information layer and the second information layer.